

JMGO Sample Confirmation Letter

Supplier Name: SHENZHEN YINGJIACHUANG TECHNOLOGY ELECTRONIC CO. LTD

Material Name: WiFi2 2.4G/5.8G Black FPC built-in Antenna (C61A)

Material No.: 23040313 /

Material Description: _____ / _____

Version: A0

Drawing Version: A0

Supplier Approved This needs to be stamped, and each acknowledgment letter needs to be stamped with a riding seal.			Shenzhen Holatek Approved			
R&D/Engineering	Quality	Approved	Product Center	R&D	Supply-Chain Center	Quality Management Department
Yin FeiJie	Yang YunGang	 Xiao Han				

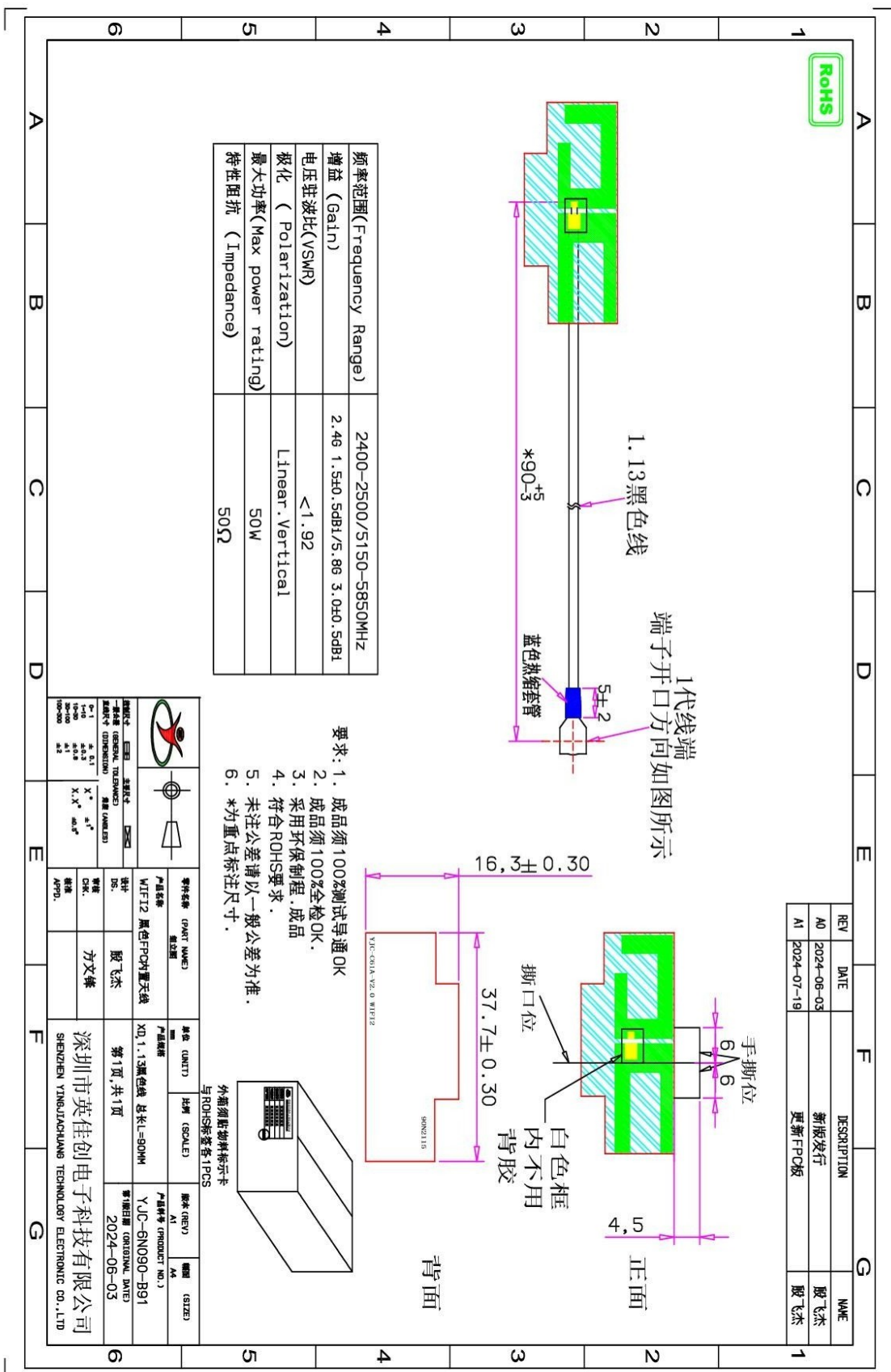
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Product drawings:



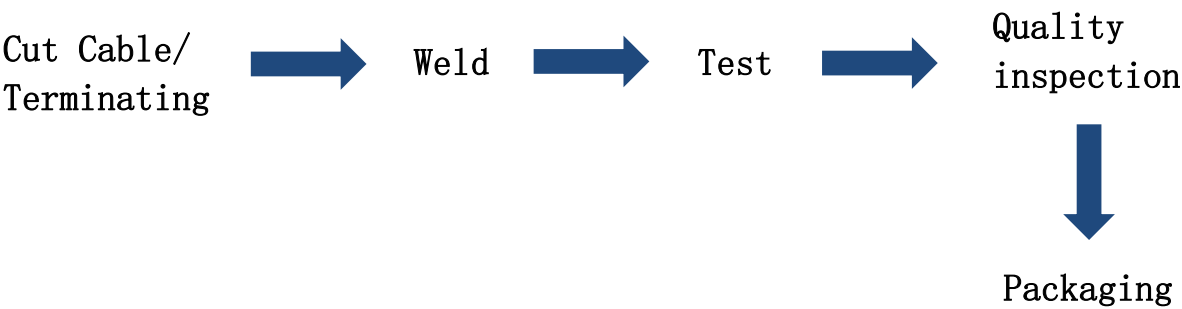
Specification:

Electrical Specifications	
Frequency Range	2400-2500/5150-5850MHz
VSWR	<1.92
Input Impedance	50 Ω
Direction	All
Gain(2.4G)	1.7 dBi
Gain(5.1G)	2.9 dBi
Gain(5.8G)	3.1 dBi
Mechanical Specifications	
Cable Color	Black
Input connector	XD
Cable length	90mm (Total Length)
Working Temperature	-20℃~+70℃
Working Humidity	20%~80%

Environmental performance test:

Project	Test condition	Standard
Storage Conditions	In the absence of specified test temperature, humidity, air pressure is as follows: 1.Temperature is - 20 ℃ ~ + 70 ℃ 2.Relative humidity of 45% to 85% 3.Air pressure is 86 kpa to 106 kpa	Electrical and mechanical properties is normal
High and low temperature test	Between 70 ℃ and -20 ℃ for 5 loops, then 1-2 h under normal conditions, check the appearance quality.	Size should meet the requirements and should satisfy the content with the electrical and mechanical properties
Constant damp and hot resistance test	95 + / - 3% relative humidity, temperature test: 40 ℃. Lasts 2 h after, try to take out the determination of electrical properties, within 5 min after try 1-2 h under article normal thing, check the appearance quality	Size should meet the requirements and should satisfy the content with the electrical and mechanical properties
vibration test	Vibration frequency range: 10-55 Hz, vibration frequency range of displacement amplitude: 0.35 MM, acceleration amplitude: 50.0 M/S, sweep cycles: 30 times	Electrical and mechanical properties is normal
Fall down test	1 m high altitude in accordance with the perpendicular axis free drop 3 times	Electrical and mechanical properties is normal

Process Flow Diagram

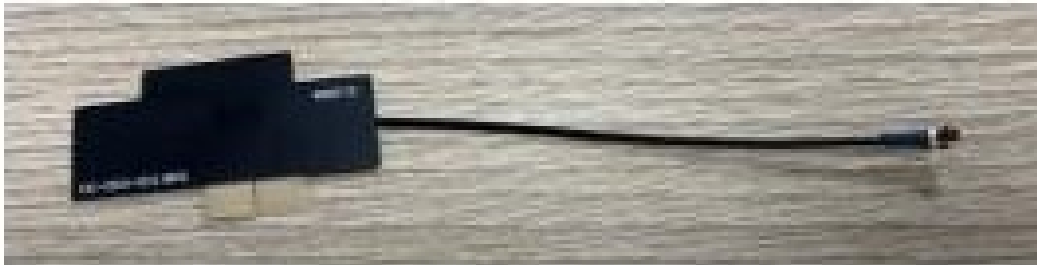


BOM list

FPC、Cable、Terminal、PE packaging bag、Carton

Performance testing reports:

Antenna physical image:



Antenna performance test chart:



Frequency (MHZ)	2400	2450	2500	5150	5725	5850
VSWR (dB)	1.26	1.33	1.79	1.85	1.25	1.10

100MHz/20dBm 20dBm 20dBm 40dBm/Analysis 0 Jan 2000

Log Mag 10.000000 Ref 0.000000

Freq (MHz)	Mag (dB)	Phase (deg)	Imag (dB)
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000
1.000000	10.000000	0.000000	0.000000

0.0000

10.0000

20.0000

30.0000

40.0000

50.0000

60.0000

70.0000

80.0000

90.0000

100.0000

110.0000

120.0000

130.0000

140.0000

150.0000

160.0000

170.0000

180.0000

190.0000

200.0000

210.0000

220.0000

230.0000

240.0000

250.0000

260.0000

270.0000

280.0000

290.0000

300.0000

310.0000

320.0000

330.0000

340.0000

350.0000

360.0000

370.0000

380.0000

390.0000

400.0000

410.0000

420.0000

430.0000

440.0000

450.0000

460.0000

470.0000

480.0000

490.0000

500.0000

510.0000

520.0000

530.0000

540.0000

550.0000

560.0000

570.0000

580.0000

590.0000

600.0000

610.0000

620.0000

630.0000

640.0000

650.0000

660.0000

670.0000

680.0000

690.0000

700.0000

710.0000

720.0000

730.0000

740.0000

750.0000

760.0000

770.0000

780.0000

790.0000

800.0000

810.0000

820.0000

830.0000

840.0000

850.0000

860.0000

870.0000

880.0000

890.0000

900.0000

910.0000

920.0000

930.0000

940.0000

950.0000

960.0000

970.0000

980.0000

990.0000

1000.0000

1010.0000

1020.0000

1030.0000

1040.0000

1050.0000

1060.0000

1070.0000

1080.0000

1090.0000

1100.0000

1110.0000

1120.0000

1130.0000

1140.0000

1150.0000

1160.0000

1170.0000

1180.0000

1190.0000

1200.0000

1210.0000

1220.0000

1230.0000

1240.0000

1250.0000

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1280.0000

1290.0000

1300.0000

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1500.0000

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1900.0000

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1940.0000

1950.0000

1960.0000

1970.0000

1980.0000

1990.0000

2000.0000

2010.0000

2020.0000

2030.0000

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2050.0000

2060.0000

2070.0000

2080.0000

2090.0000

2100.0000

2110.0000

2120.0000

2130.0000

2140.0000

2150.0000

2160.0000

2170.0000

2180.0000

2190.0000

2200.0000

2210.0000

2 Resonance 3 Minima 4 Hic/Nulls 5 Two Steps

Mag S21 Log Mag 15.00dB Ref 0.000dB

Marker	Frequency (GHz)	Magnitude (dB)
1	2.400000	-33.764
2	2.450000	-29.546
3	2.800000	-29.552
4	3.100000	-27.744
5	3.500000	-20.613
6	3.850000	-33.558

E5071B Menu

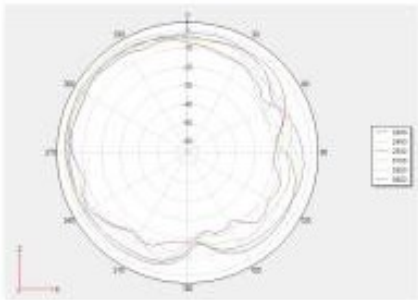
- Measurement (S21)
- Format (Log Mag)
- Scale
- Display
- Average
- Calibration
- Markers
- Sweep Setup
- Trigger

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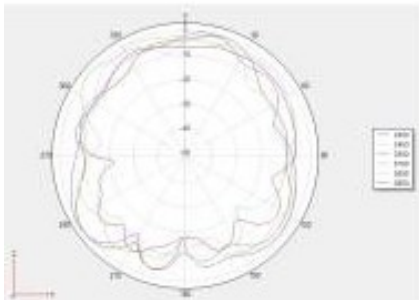
2D、3D test data (WIFI 2):

Frequency	Efficiency (%)	Gain. (dBi)
2400MHz	37.21	1.45
2410MHz	37.47	1.44
2420MHz	36.14	1.70
2430MHz	36.84	1.63
2440MHz	37.12	1.59
2450MHz	37.02	1.53
2460MHz	37.02	1.56
2470MHz	36.23	1.48
2480MHz	35.89	1.51
2490MHz	35.79	1.44
2500MHz	35.99	1.42
5150MHz	42.64	2.84
5250MHz	42.38	2.90
5350MHz	42.10	2.93
5450MHz	43.59	2.78
5550MHz	43.81	2.73
5650MHz	43.94	3.00
5750MHz	43.07	3.10
5850MHz	40.35	3.06

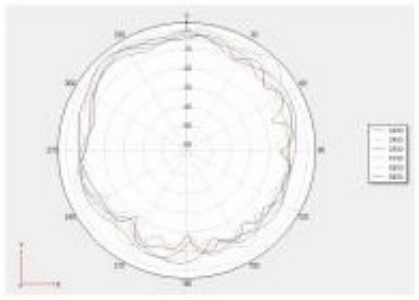
Phi 0 2D :



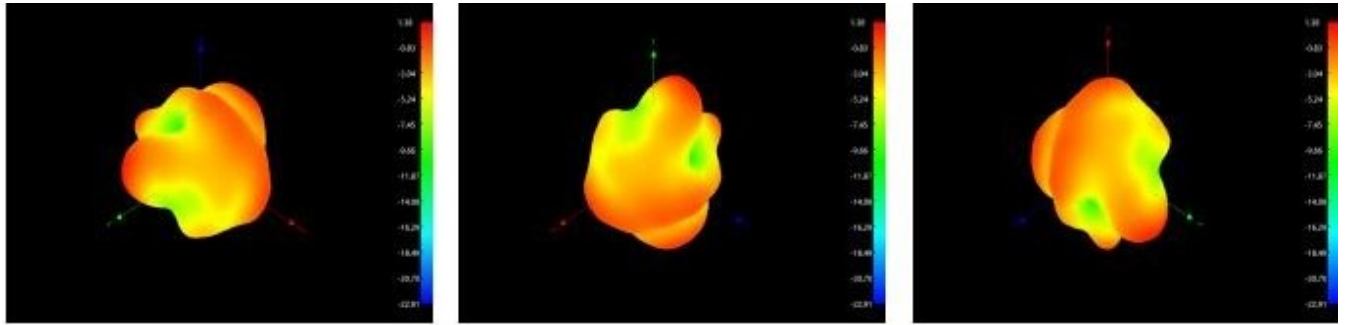
Phi 90 2D



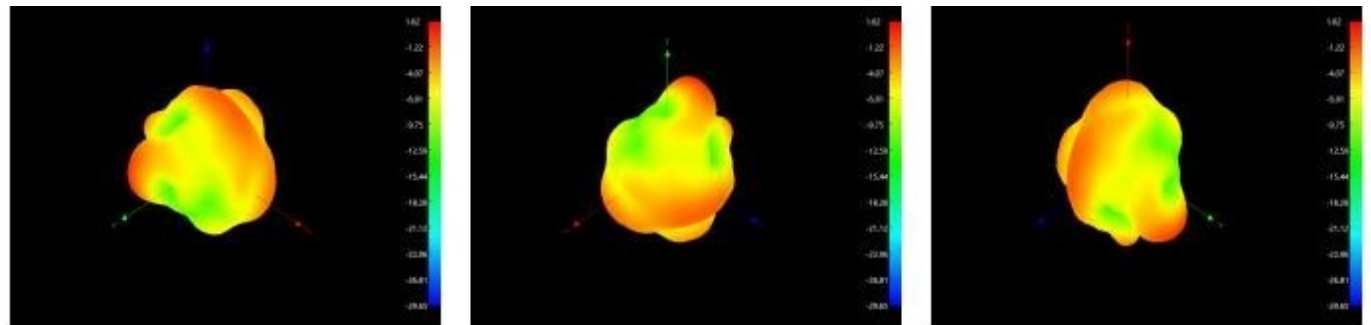
Theta 90 2D



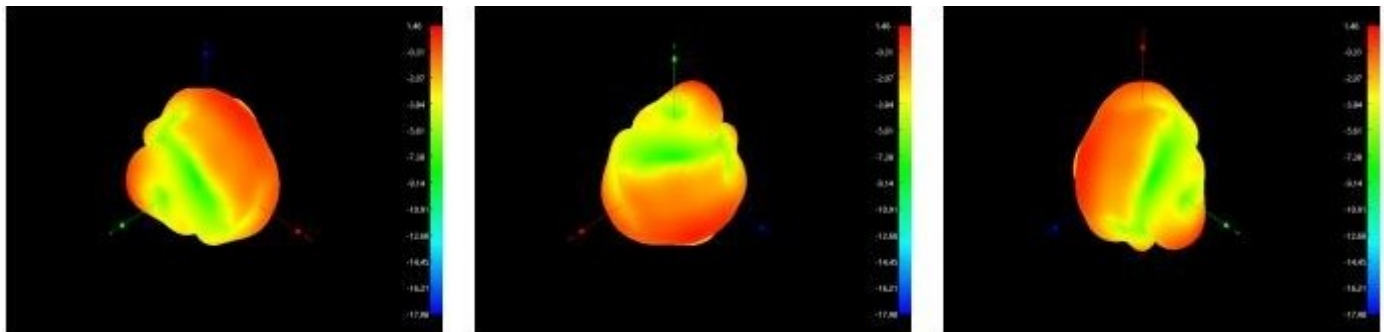
3D 2400:



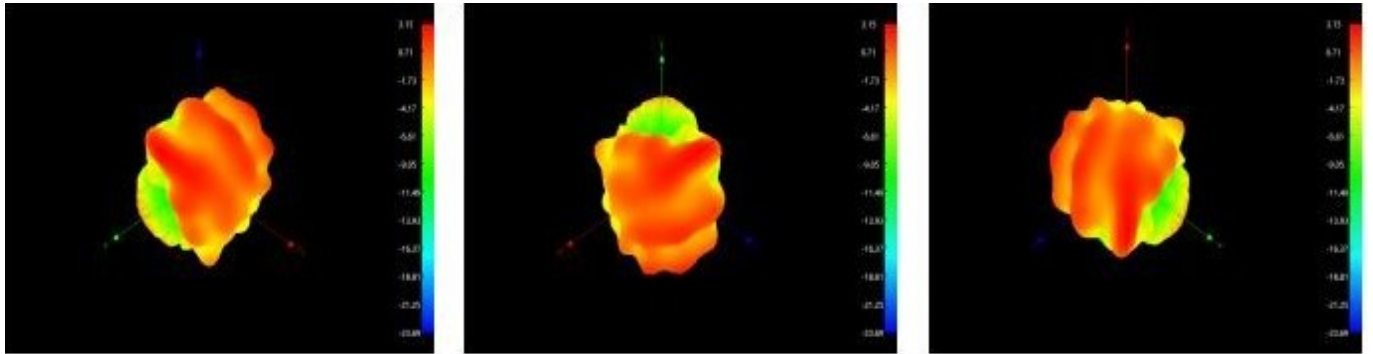
3D 2450:



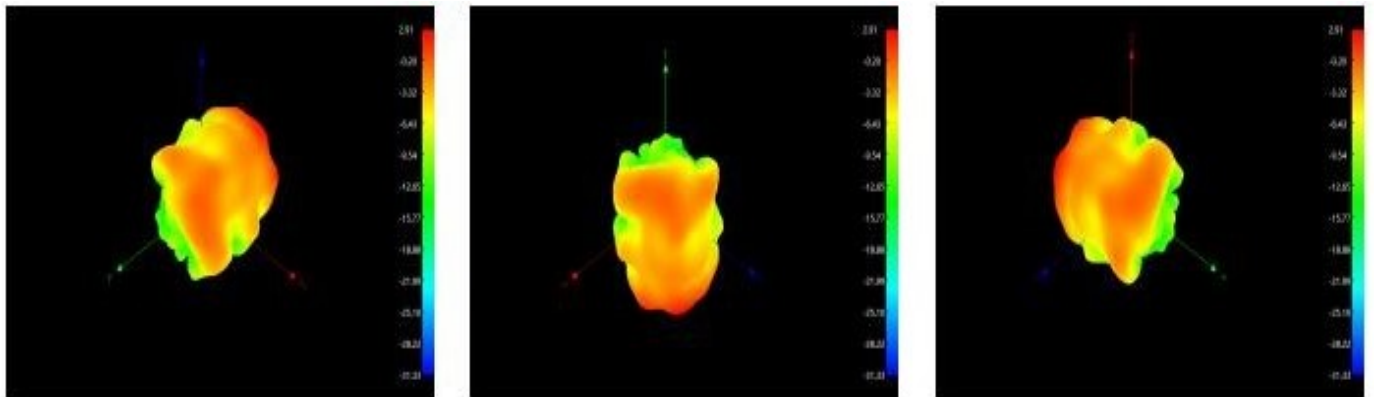
3D 2500:



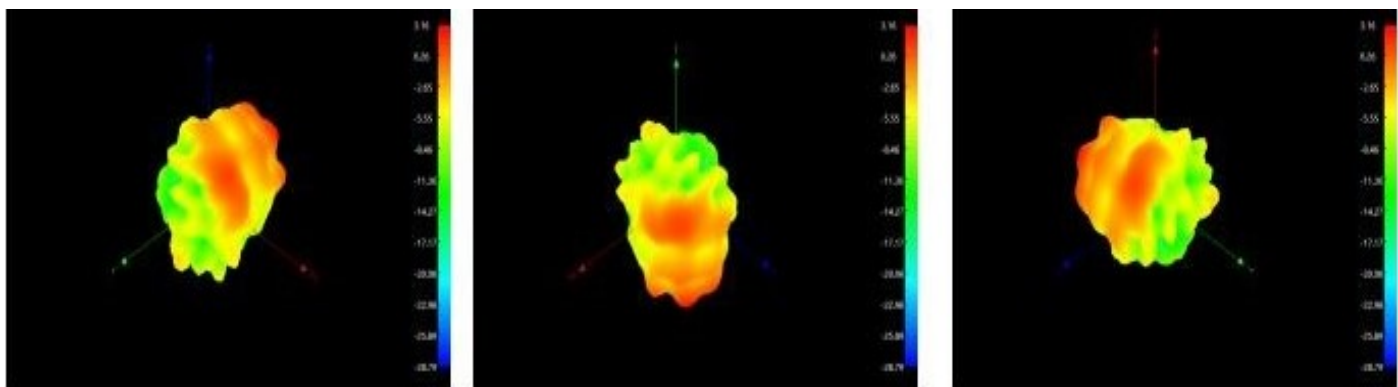
3D 5150:



3D 5500:



3D 5850:



OTA active test data:

Item	Measurement	Band	Channel	Frequency	Total
1	TRP	WIFI_B (11M)	1	2412	10.97
2	TRP	WIFI_B (11M)	6	2437	11.01
3	TRP	WIFI_B (11M)	11	2462	11.58
4	TIS(EIRP)	WIFI_B (11M)	1	2412	-74.82
5	TIS(EIRP)	WIFI_B (11M)	6	2437	-76.84
6	TIS(EIRP)	WIFI_B (11M)	11	2462	-75.49
7	TRP	WIFI_G (54M)	1	2412	9.73
8	TRP	WIFI_G (54M)	6	2437	9.17
9	TRP	WIFI_G (54M)	11	2462	8.85
10	TIS(EIRP)	WIFI_G (54M)	1	2412	-62.83
11	TIS(EIRP)	WIFI_G (54M)	6	2437	-63.79
12	TIS(EIRP)	WIFI_G (54M)	11	2462	-63.32
13	TRP	WIFI_N_ISM (65M)	1	2412	13.2
14	TRP	WIFI_N_ISM (65M)	6	2437	10.84
15	TRP	WIFI_N_ISM (65M)	11	2462	10.05
16	TIS(EIRP)	WIFI_N_ISM (65M)	1	2412	-57.88
17	TIS(EIRP)	WIFI_N_ISM (65M)	6	2437	-58.88
18	TIS(EIRP)	WIFI_N_ISM (65M)	11	2462	-58.52
19	TRP	WIFI_A (54M)	36	5180	14.39
20	TRP	WIFI_A (54M)	149	5745	13.95
21	TRP	WIFI_A (54M)	165	5825	13.18
22	TIS(EIRP)	WIFI_A (54M)	36	5180	-74.12
23	TIS(EIRP)	WIFI_A (54M)	149	5745	-73.03
24	TIS(EIRP)	WIFI_A (54M)	165	5825	-74.48

Material RoHS conformity declaration form											
This is to certify that the delivery to your company's components, raw materials, auxiliary materials used and the additives in the production engine ord with RoHS environmental requirements of the restrictions on the use of hazardous substances directive (RoHS directive 2011/65 / EC)											
About components used raw materials, packaging materials, auxiliary materials and additives used in the production process such as composition of the report is as follows:											
Component /Part Name	Material Composition	ICP report #	Test Org.	Test Date	Content of harmful substances (ppm)						PASS?
					Cd	Pb	Hg	Cr ⁶⁺	PBB	PBDE	PASS
FPC	Ink	ETR23701480	SGS	23/07/13	ND	ND	ND	ND	ND	ND	PASS
	3M9471LE	SHAEC23021627701	SGS	23/12/27	ND	ND	ND	ND	ND	ND	PASS
	Cooper foil	A2240082746101006E	CTI	24/03/01	ND	ND	ND	ND	ND	ND	PASS
Wire	Series Coaxial Cables	CANEC24002746206	SGS	24/02/23	ND	ND	ND	ND	ND	ND	PASS
Terminal	Copper	CANEC24000977302	SGS	24/01/22	ND	6	ND	ND	ND	ND	PASS
	Au plating	A2230400553101001E	CTI	23/08/12	ND	ND	ND	ND	ND	ND	PASS
	Rubber core	ETR23705931	SGS	23/08/04	ND	ND	ND	ND	ND	ND	PASS
Enviro nmenta lly friend ly Tin	Environmenta lly friendly Tin wire	SZXEC23001647204	SGS	23/07/28	ND	63	ND	ND	ND	ND	PASS
Tube	Tube	CANEC24001723028	SGS	24/01/29	ND	63	ND	ND	ND	ND	PASS